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# AZ economy "on hold" while US economy cools

## Quarterly Economic Forecast

The national economy continues to follow a course consistent with Federal Reserve efforts to navigate the narrow channel between inflation and recession. The output of goods and services is growing at a moderate pace and there are signs that inflation is cooling somewhat. During the summer, the annualized rate of increase in the Consumer Price Index dropped below three percent for the first time in 18 months, after peaking at more than eight percent in April.

Meanwhile, second quarter growth in inflation-adjusted Gross National Product was reported at 2.7 percent. This was better than expected by some analysts who had cautioned that a recession was actually underway in the spring.

The revised rate of real GNP growth for the first half was 2.1 percent, less than half the 4.5 percent recorded for all of last year.

The Arizona economy during the first half of the year performed at a pace below the nation as a whole. National wage and salary nonagricultural employment grew 3.1 percent through June of 1989, while Arizona nonfarm job creation was only 1.3 percent. Through the first half, Arizona ranked 41st among all states in the rate of growth of employment.

### THE NATIONAL SCENE

The first half of the year was marked by conflicting statements from analysts attempting to decipher the signals emanating from the economy. Optimists saw evidence supporting the "soft landing" outcome for the economy, while others suggested the Federal Reserve had overreacted and negative growth was the certain result.

Those who focus attention on the M1 money stock (currency in circulation and checkable deposits) were concerned the Fed had over-killed when this measure actually declined between February and midsummer.

M2 (M1 plus various savings and money market-type accounts) — was allowed by the Fed to grow very slowly during the winter and spring. Since then, this monetary variable, often thought to be a more revealing indicator than M1, has surged into the double-digit growth range, a move interpreted by some as evidence that the Fed feels the battle against inflation is at least temporarily successful.

Interest rate watchers claim policy changed when rates peaked in March, then fell through the late spring and summer. The three-month Treasury Bill rate dipped from 9 percent to 8 percent by July. Recently, rates have felt upward pressures as the Treasury auctioned massive new issues to finance the Federal deficit and cope with the S&L bail-out.

While the slower growth of GNP has grabbed most of the headlines, other key economic measures also leave little doubt the economy has cooled in recent months. The preliminary estimate is that the economy created 618,000 jobs during the second quarter of this year, a 25 percent decrease from the corresponding figure for the second quarter of last year, 829,000. Industrial production, which averaged gains of about 5 percent during 1987 and 1988 grew only 1 percent between the end of last year and mid-summer.

### THE NATIONAL OUTLOOK

The national forecast by the Economic Outlook Center (EOC) calls for inflation-adjusted GNP to grow by 2.4 percent in 1989 and 2.0 percent in 1990 (Table 1, page 2). A recent consensus forecast of 50 economists polled by Robert J. Eggert in *Blue Chip Economic Indicators* projected only 1.6 percent real growth in 1990. Thus, the EOC forecast is consistent with the more optimistic of the Blue Chip panelists.

The EOC national scenario envisions slowing business conditions in the second half of this year as the economy exhibits a lagged response to the monetary restraint of last winter.

With no national recession in sight at this time, analysts now believe the Federal Reserve will enter an interim period during which rates will not move downward significantly. However, by the first of next year, many believe the prime will be below 10 percent.

The EOC interest rate forecast has been reduced for 1990. The three-month Treas-

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ury Bill rate is now expected to average 7.4 percent during next year, and the Aaa corporate bond rate will average 8.8 percent.

Lower rates are associated with a slightly better year for housing nationally, with 1.5 million starts. However, as the economy creates jobs at a slower pace, the national unemployment rate will move upward slightly to average 5.7 percent for 1990.

## THE ARIZONA ECONOMY

Based on estimates of new jobs in the state prepared by the Arizona Department of Economic Security, the strongest sectors of the economy during the first half of 1989 were trade (up 3.2 percent) and government (up 2.8 percent). Both of these sectors are driven by increases in population, which grew in Arizona at a pace about double the national average.

Through the first half, manufacturing has been disappointing. Last year, manufacturing jobs were up by only 1.3 percent. This year, growth through the first half has been even weaker, at 0.2 percent.

The service sector, usually one of the more vigorous components of the state's economy, has turned in a similarly subpar performance during the first half. Last year, service employment was up 4.6 percent for the year. So far, the Arizona serv-

**TABLE 1**

**1989 AND 1990 ECONOMIC FORECASTS: UNITED STATES**

| | Actual *1985* | Actual *1986* | Actual *1987* | Actual *1988* | Forecast *1989* | Forecast *1990* |
|---|---|---|---|---|---|---|
| Gross National Product | | | | | | |
| Billions of 1982 Dollars | 3,618.7 | 3,721.7 | 3,847.0 | 3,996.0 | 4,091.0 | 4,173.0 |
| Percent Change | 3.4 | 2.8 | 3.4 | 3.9 | 2.4 | 2.0 |
| Industrial Production (Percent Change) | 1.9 | 1.1 | 3.8 | 5.7 | 3.0 | 1.5 |
| Net Exports (Billions of 1982 Dollars) | -104.3 | -137.5 | -128.9 | -100.2 | -91.2 | -70.5 |
| Housing Starts | | | | | | |
| Number in Millions | 1.74 | 1.81 | 1.62 | 1.49 | 1.46 | 1.50 |
| Percent Change | 1.7 | 4.0 | -10.5 | -8.0 | -2.0 | 2.7 |
| Unemployment Rate (Percent) | 7.2 | 7.0 | 6.2 | 5.5 | 5.4 | 5.7 |
| Consumer Price Index (Percent Change) | 3.6 | 1.9 | 3.6 | 4.1 | 4.6 | 4.7 |
| Three-Month Treasury Bill Rate (Percent) | 7.5 | 6.0 | 5.8 | 6.7 | 7.9 | 7.4 |
| Aaa Corporate Bond Rate (Percent) | 11.4 | 9.0 | 9.4 | 9.7 | 9.0 | 8.8 |

**TABLE 2**

**1989 AND 1990 ECONOMIC FORECASTS: ARIZONA**

| | Actual *1985* | Actual *1986* | Actual *1987* | Actual *1988* | Forecast *1989* | Forecast *1990* |
|---|---|---|---|---|---|---|
| Gross State Product | | | | | | |
| Millions of 1982 Dollars | 43,505 | 45,923 | 46,905 | 47,795 | 48,846 | 50,360 |
| Percent Change | 8.0 | 5.6 | 2.1 | 1.9 | 2.2 | 3.1 |
| Personal Income | | | | | | |
| Millions of Current Dollars | 40,963 | 44,766 | 48,699 | 52,233 | 55,785 | 59,802 |
| Percent Change | 11.3 | 9.3 | 8.8 | 7.3 | 6.8 | 7.2 |
| Retail Sales | | | | | | |
| Millions of Current Dollars | 16,169 | 17,187 | 18,001 | 18,855 | 19,892 | 21,006 |
| Percent Change | 9.7 | 6.3 | 4.7 | 4.7 | 5.5 | 5.6 |
| Unemployment Rate (Percent) | 6.5 | 6.9 | 6.3 | 6.3 | 6.4 | 6.2 |
| Wage and Salary Employment | | | | | | |
| Number in Thousands | 1,278.6 | 1,337.8 | 1,385.8 | 1,410.6 | 1,435.2 | 1,470.9 |
| Percent Change | 8.2 | 4.6 | 3.6 | 1.8 | 1.7 | 2.5 |
| Population | | | | | | |
| Number in Thousands | 3,205 | 3,330 | 3,430 | 3,507 | 3,584 | 3,670 |
| Percent Change | 4.0 | 3.9 | 3.0 | 2.2 | 2.2 | 2.4 |
| Single-Family Units Permitted | | | | | | |
| Number | 33,271 | 34,079 | 27,360 | 22,791 | 18,689 | 19,997 |
| Percent Change | 7.8 | 2.4 | -19.7 | -16.7 | -18.0 | 7.0 |
| Multifamily Units Permitted* | | | | | | |
| Number | 37,312 | 27,008 | 12,038 | 8,853 | 6,197 | 6,383 |
| Percent Change | -22.0 | -27.6 | -55.4 | -26.5 | -30.0 | 3.0 |

*Apartment complexes of three or more units

*Source (Tables 1 and 2):* Economic Outlook Center, College of Business, Arizona State University.

ice sector has created only 1.7 percent more jobs in 1989.

Losses continue in construction, aerospace, and finance, insurance, and real estate (FIRE). At mid-1989, these three sectors had seen the disappearance of a combined total of 6,500 jobs over the same period in the previous year.

Analysts often point out that the figures prepared by the Department of Economic Security are estimated by a sampling procedure and are subject to revision. Even with this caveat, however, it appears that 1989 is very likely to bring a lower rate of job creation than experienced last year.

The only employment indicator which seems to be significantly improved over last year at this time is the Arizona unemployment rate. At mid-year, the seasonally adjusted rate was 5.2 percent, down more than a full percentage point from the previous summer. However, the falling unemployment rate is itself a signal that people are leaving the state seeking better opportunities elsewhere. Workers leaving the state also contribute to the low levels of net migration recorded in recent quarters.

Arizona's estimated rate of population increase for the 12 months ending in June 1989 was 2.1 percent, with an estimated 35,000 net migrants and 38,000 natural increase (see *Arizona Business*, September, 1989, page 5).

**TABLE 3**

**ARIZONA EMPLOYMENT FORECASTS**
**For 1989-1990 (thousands)**

| | 1985 | Percent Change | 1986 | Percent Change | 1987 | Percent Change | 1988 | Percent Change | 1989 | Percent Change | 1990 | Percent Change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Manufacturing | 181.6 | 5.1 | 184.6 | 1.6 | 187.4 | 1.5 | 189.9 | 1.3 | 192.0 | 1.1 | 195.3 | 1.7 |
| Mining | 11.9 | -9.2 | 11.0 | -7.8 | 11.4 | 3.5 | 12.0 | 5.3 | 12.7 | 5.5 | 13.1 | 3.2 |
| Construction | 112.1 | 15.6 | 113.1 | 0.8 | 103.2 | -8.7 | 93.9 | -9.0 | 88.3 | -6.0 | 88.7 | 0.5 |
| TCPU* | 62.9 | 5.2 | 66.0 | 4.8 | 71.7 | 8.7 | 72.7 | 1.4 | 73.9 | 1.6 | 75.2 | 1.8 |
| Trade | 311.4 | 8.7 | 326.3 | 4.8 | 340.3 | 4.3 | 347.5 | 2.1 | 359.7 | 3.5 | 368.7 | 2.5 |
| FIRE** | 81.0 | 12.3 | 88.9 | 9.8 | 94.5 | 6.3 | 93.3 | -1.3 | 90.4 | -3.1 | 90.7 | 0.3 |
| Services | 299.9 | 9.7 | 323.8 | 8.0 | 345.3 | 6.6 | 361.2 | 4.6 | 370.2 | 2.5 | 383.9 | 3.7 |
| Government | 218.1 | 5.1 | 225.0 | 3.2 | 232.0 | 3.1 | 240.3 | 3.6 | 248.1 | 3.2 | 255.5 | 3.0 |
| Total Wage and Salary Employment | 1,278.6 | 8.2 | 1,337.8 | 4.6 | 1,385.8 | 3.6 | 1,410.6 | 1.8 | 1,434.6 | 1.7 | 1,469.0 | 2.4 |
| Total Employment | 1,381.0 | 1.5 | 1,463.0 | 5.9 | 1,511.0 | 3.3 | 1,550.0 | 2.6 | 1,588.8 | 2.5 | 1,644.4 | 3.5 |
| Total Unemployment | 96.0 | 35.2 | 109.0 | 13.5 | 101.0 | -7.3 | 104.0 | 3.0 | 109.9 | 5.7 | 113.5 | 3.3 |
| Labor Force | 1,477.0 | 3.1 | 1,572.0 | 6.4 | 1,612.0 | 2.5 | 1,654.0 | 2.6 | 1,698.7 | 2.7 | 1,758.2 | 3.5 |
| Unemployment Rate | | 6.5 | | 6.9 | | 6.3 | | 6.3 | | 6.8 | | 6.5 |

*Transportation, Communications and Public Utilities

**Finance, Insurance and Real Estate

**TABLE 4**

**1989 AND 1990 ECONOMIC FORECASTS: MARICOPA COUNTY**

| | Actual *1985* | Actual *1986* | Actual *1987* | Actual *1988* | Forecast *1989* | Forecast *1990* |
|---|---|---|---|---|---|---|
| Consumer Price Index | | | | | | |
| Percent Change | 5.0 | 1.4 | 4.1 | 4.1 | 5.0 | 5.1 |
| Retail Sales | | | | | | |
| Millions of Current Dollars | 10,829 | 11,342 | 11,743 | 12,223 | 12,895 | 13,617 |
| Percent Change | 11.2 | 4.7 | 3.5 | 4.1 | 5.5 | 5.6 |
| Unemployment Rate (Percent) | 5.1 | 5.6 | 5.2 | 5.1 | 5.2 | 5.0 |
| Wage and Salary Employment | | | | | | |
| Number in Thousands | 842.4 | 882.6 | 913.8 | 931.3 | 948.1 | 970.9 |
| Percent Change | 9.1 | 4.8 | 3.5 | 2.0 | 1.8 | 2.4 |
| Population | | | | | | |
| Number in Thousands | 1,826 | 1,910 | 1,976 | 2,021 | 2,066 | 2,120 |
| Percent Change | 5.6 | 4.6 | 3.4 | 2.3 | 2.2 | 2.6 |
| Single-Family Units Permitted | | | | | | |
| Number | 23,143 | 23,851 | 18,012 | 14,734 | 11,787 | 12,589 |
| Percent Change | 11.4 | 3.1 | -24.5 | -18.2 | -20.0 | 6.8 |
| Multifamily Units Permitted* | | | | | | |
| Number | 27,271 | 18,311 | 9,106 | 6,160 | 4,004 | 4,104 |
| Percent Change | -25.9 | -32.9 | -50.3 | -32.4 | -35.0 | 2.5 |

*Apartment complexes of three or more units

*Source (Tables 3 and 4):* Economic Outlook Center, College of Business, Arizona State University.

Real estate activity in the state through the first half was weaker than in the previous year. Resales of single-family homes in metropolitan Phoenix were down 12.5 percent for the first half.

Residential building was also down in the first half, with permits registering a 3.3 percent dip over the first half of the previous year. The 6,087 single-family units permitted in Phoenix was about half the number permitted in Las Vegas during the same period. Arizona multifamily activity plummeted in the first half to a level 67.3 percent below last year.

### THE ARIZONA OUTLOOK

Figures available for the first half of 1989 leave little doubt that this year will, at best, barely measure up to last year in terms of those indicators that affect the Arizona economy in the real sense—variables such as jobs, population, and housing.

Overall employment growth will improve slightly in 1990, but will still be only about one-half the long term average growth rate, at 2.5 percent. Sectors providing most of the stimulus include trade, services, and government. Construction employment is expected to stabilize after bottoming out at about 88,000 jobs, a 25,000 job decrease from the average level of 1986.

The EOC Arizona forecast anticipates slightly lower interest rates during 1990 that should sustain — but not stimulate — the residential housing market. Single-family activity will be up 7 percent in 1990, to about 20,000 permits, still significantly lower than the mid-1980s.

The Maricopa County forecast parallels the Arizona forecast. Currently, the metropolitan Phoenix area accounts for about two out of three Arizona jobs. During 1990, employment in the metro Phoenix area will grow by 2.4 percent, according to the EOC outlook. Population will grow by 54,000 persons, with net migration of about 26,000 persons.

In spite of unspectacular growth figures, the state economy is not in recession. We are in the midst of a slow but positive growth period of uncertain length.

What is troubling about the current situation is that, without significantly lower interest rates, there are no forces on the horizon to change the Arizona growth picture for the intermediate term. Reduced interest rates, and particularly mortgage rates in the 8 percent range, would stimulate housing starts, immigration, and general growth in sectors that are now lagging such as finance and real estate. But until the Federal Reserve becomes convinced that inflation is whipped — or there is a period of sharply lower national economic growth — such a reduction in interest rates does not seem to be in the cards.

– **Lee R. McPheters,** *Director*
*Economic Outlook Center*

# Arizona leading index up again in July

The Arizona Index of Leading Economic Indicators increased in July to 117.6. The July number was .26 percent higher than the revised 117.3 number for June 1989 and 2.4 percent below the July 1988 number of 120.5 (1982 = 100).

Money supply, production, and sensitive prices were positive influences. Residential building permits, hours worked in manufacturing, and new orders were negative influences. Delivery times and inventories were unchanged this month.

### ANALYSIS

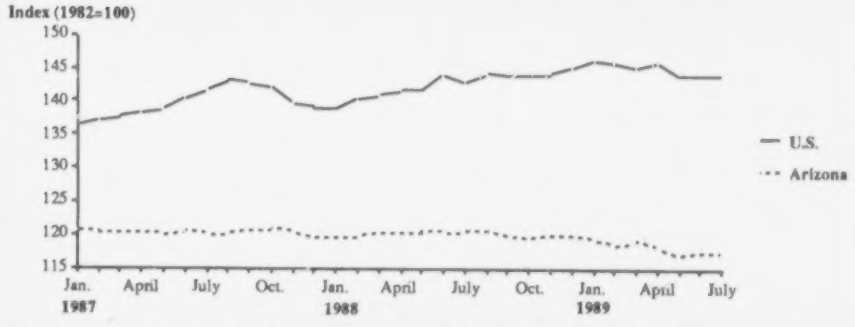
The U.S. economy continues to show surprising strength despite the advanced age of the current expansion and the pronouncements of all the doomsayers. However, Arizona has not enjoyed the same robust health over the last few years. Figure I highlights the different paths taken by the national and local economies. While the national leading index has been on an upward track during most of the last two and a half years, the Arizona leading index has been flat or dropping over the same period.

The U.S. economy as a whole has benefited from the boom in exports induced by the falling value of the dollar. The demand for U.S. goods has revitalized some declining areas of the country. Unfortunately, Arizona's industrial mix is such that there was very little export-induced increase in demand. At the same time, cutbacks in military spending have adversely affected many Arizona employers.

The largest negative for the Arizona economy has been the construction slump. The boom went bust when tax reform removed most of the tax advantages that had propped up many projects. Arizona will feel the effects of the current slump for a long time as federal regulators deal with the dead and wounded of the Savings and Loan debacle. In the U.S. as a whole, the construction industry has had to deal with high interest rates, but without the complications of overbuilding.

**FIGURE I**

**ARIZONA INDEX OF LEADING ECONOMIC INDICATORS**




*Source:* Economic Outlook Center, College of Business, Arizona State University; sponsored by Citibank (Arizona).

### OUTLOOK

The Arizona economy has done remarkably well, given the range and severity of the problems it has seen over the last few years. But, its currently weakened state leaves it very sensitive to what happens in the national economy. Recent statistics indicate that the national economy is doing better than expected, which is welcome news for Arizona.

– **Tracy L. Clark,** *Economist*
*Economic Outlook Center*

# Construction is improved but still slow in 2nd quarter

After an anemic first quarter 1989, the Arizona construction industry rebounded during the second quarter from $951 million (17,182 permits) to $1.1 billion (19,638 permits). Construction activity, however, is still well below the $1.4 billion (22,296 permits) recorded during the second quarter of 1988.

While Maricopa County showed improvement from $706 to $804 million, its share of the state's activity declined from 74 to 72 percent. Pima County reported an increase in construction activity from $88 to $99 million, but its market share remained at only nine percent. In contrast, construction in the non-metropolitan areas showed strong improvement from $157 million in the first quarter to the current $213 million, swelling its share from 17 to 19 percent. Several counties recorded improved permitted activity over the first quarter, including Mohave ($56 to $63 million), Pinal ($6 to $11 million), Cochise ($4 to $14 million) and Coconino ($20 to $35 million).

More than 80 percent of the permitted activity in the state of Arizona occurred in the twelve areas listed in Table 1. Nearly 25 percent of the recorded activity in Phoenix was accounted for by two public office buildings ($46 million) and 27 educational permits ($35 million). While Lake Havasu City continued to lead the non-metropolitan areas, other communities also reported significant levels of activity, among them Bullhead City ($19 million), Flagstaff ($19 million), and Prescott ($12 million).

**TABLE 1**

**REPORTING UNITS WITH GREATEST TOTAL VALUE OF BUILDING PERMITS**
**Second Quarter 1989**

| Reporting Unit | Value *(in millions)* |
|---|---|
| Phoenix | $359 |
| Scottsdale | 150 |
| Mesa | 64 |
| Unincorporated Maricopa County | 52 |
| Unincorporated Pima County | 47 |
| Chandler | 46 |
| Tucson | 41 |
| Tempe | 39 |
| Lake Havasu City | 28 |
| Glendale | 24 |
| Gilbert | 23 |
| Peoria | 23 |

*Source:* Arizona Real Estate Center, College of Business, Arizona State University.

## RESIDENTIAL

Following a fairly typical pattern, single-family activity in Maricopa County posted a six percent increase over the first quarter (2,953 to 3,134 permits) but was down 28 percent from a year ago (4,347 permits). New development was most evident in Phoenix (914 permits), unincorporated Maricopa County (553 permits), and Scottsdale (313 permits).

In much the same way, Pima County's 37 percent increase (from 574 to 786 single-family permits) still fell far short of the 991 permits reported for a year ago. Oro Valley continued to be a strong area of activity, increasing from 86 to 109 permits. More than 65 percent of the permitted activity (509 permits) was in unincorporated areas, while 20 percent occurred in Tucson (155 permits).

With 1,529 issued permits, the single-family sector in the non-metropolitan areas was stronger than both the first quarter (1,151 permits) and a year ago (1,432 permits). New home development was very evident in Lake Havasu City (344 permits), Prescott (111 permits) and unincorporated Yavapai County (161 permits).

**TABLE 2**

**KEY SECTOR CONSTRUCTION ACTIVITY**
**(Second Quarter 1989, First Quarter 1989, and Second Quarter 1988)**

| | SINGLE FAMILY | | COMMERCIAL | | | | | | INDUSTRIAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | APARTMENTS[a] | | OFFICE BUILDINGS[b] | | RETAIL STORES[c] | | | |
| Maricopa County | *Number of Permits* | *Dollar Value (000)* | *Number of Units* | *Dollar Value (000)* | *Number of Permits* | *Dollar Value (000)* | *Number of Permits* | *Dollar Value (000)* | *Number of Permits* | *Dollar Value (000)* |
| 2nd Quarter 1989 | 3,134 | 327,206 | 673 | 34,646 | 60 | 85,068 | 128 | 78,070 | 34 | 18,921 |
| 1st Quarter 1989 | 2,953 | 325,668 | 546 | 31,666 | 50 | 87,475 | 110 | 28,522 | 32 | 38,102 |
| 2nd Quarter 1988 | 4,347 | 413,813 | 2,888 | 138,715 | 61 | 70,289 | 231 | 134,766 | 32 | 14,573 |
| Pima County | | | | | | | | | | |
| 2nd Quarter 1989 | 786 | 36,090 | 12 | 385 | 15 | 2,471 | 21 | 3,838 | 4 | 3,229 |
| 1st Quarter 1989 | 574 | 41,279 | 39 | 953 | 14 | 1,838 | 25 | 10,242 | 5 | 2,101 |
| 2nd Quarter 1988 | 991 | 68,616 | 397 | 15,094 | 20 | 5,570 | 14 | 1,331 | 10 | 5,738 |
| Rest of Arizona | | | | | | | | | | |
| 2nd Quarter 1989 | 1,529 | 122,771 | 258 | 8,284 | 27 | 2,858 | 65 | 19,289 | 15 | 6,662 |
| 1st Quarter 1989 | 1,151 | 76,449 | 179 | 5,989 | 17 | 2,225 | 65 | 13,617 | 17 | 1,758 |
| 2nd Quarter 1988 | 1,432 | 98,426 | 190 | 5,513 | 36 | 3,434 | 81 | 27,855 | 22 | 2,442 |
| Arizona Total | | | | | | | | | | |
| 2nd Quarter 1989 | 5,449 | 486,067 | 943 | 43,315 | 102 | 90,397 | 214 | 101,197 | 53 | 28,812 |
| 1st Quarter 1989 | 4,678 | 443,396 | 764 | 38,608 | 81 | 91,538 | 200 | 52,381 | 54 | 41,961 |
| 2nd Quarter 1988 | 6,770 | 580,855 | 3,475 | 159,322 | 117 | 79,293 | 326 | 163,962 | 64 | 22,753 |

[a] Five or more housing units
[b] Office, bank, medical and professional buildings
[c] Shopping centers and other mercantile buildings

*Source:* Arizona Real Estate Center, College of Business, Arizona State University.

## COMMERCIAL

The office building sector in Maricopa County continued to show a good level of activity at $85 million, slightly under the first quarter's $87 million, and well above the $70 million reported a year ago. Most of the activity occurred in Phoenix ($57 million) and Scottsdale ($23 million). Tucson represented $2 million of the $2.5 million recorded in Pima County. No office building permit for over $1 million was issued in the rest of Arizona.

Retail development rebounded sharply in Maricopa County from $28 million in the first quarter to $78 million, but was well below the $135 million reported a year ago. Phoenix was the primary area of new retail activity with $36 million, followed by Scottsdale ($14 million), and Mesa ($9 million). Retail development in Pima County was mostly located in Tucson, which produced $3 million of the $3.8 million recorded in the county. The $19 million recorded in the rest of Arizona was an improvement over the $14 million issued during the first quarter, but fell short of the $28 million in new permits recorded a year ago. Retail activity was strongest in Sierra Vista ($3 million), Flagstaff ($6 million), and Bullhead City ($5 million).

The apartment sector continued to produce low levels of activity; only 673 units were permitted in Maricopa County, led by Chandler (284 units) and Scottsdale (189 units). Phoenix authorized only 18 units. Pima County had only 12 permitted units, all of them in Tucson. In contrast, the apartment sector improved in the rest of Arizona, especially in unincorporated Apache County (55 units), Flagstaff (82 units), and Yuma (36 units).

The hotel/motel sector improved from $8 million in first quarter to $21 million, with its strongest activity in Flagstaff ($2 million), Williams ($2 million), and Phoenix ($18 million).

## INDUSTRIAL AND OTHER

After a strong first quarter ($38 million), industrial activity in Maricopa County declined to $19 million. The primary areas of activity were Phoenix ($8 million), Tempe ($6 million), and unincorporated Maricopa County ($4 million). One permit was issued by Marana, in Pima County, for $3 million. Significant industrial activity was also reported in Casa Grande ($3 million), and Flagstaff ($1 million).

New educational facilities continued to be a strong source of activity with a reported $50 million in the second quarter, particularly in Eager ($3 million), Phoenix ($36 million), unincorporated Navajo County ($4 million), and Benson ($1 million). As noted, permits for public office buildings were issued for a city building in Phoenix ($25 million), and for the state ($21 million).

## LOOKING AHEAD

Although construction activity improved during the second quarter, the year-to-date total of $2.1 billion is still below the $2.4 billion recorded during the first half of 1988. Further, the driving forces consisted of improvements in the non-metropolitan areas, especially Mohave and Coconino counties, and public projects in Maricopa County. While these forces can provide the basis for maintaining current construction activity, they are not sufficient to propel the industry beyond that.

The most positive note is the relative improvement reported for the non-metropolitan areas. This pattern is frequently evident when development activity slows in metropolitan areas. Basically, developers are taking advantage of many previously overlooked opportunities driven by growing economies and population in the non-metropolitan areas. Much of that

**TABLE 3**

**ARIZONA HOUSING UNITS AUTHORIZED**
**Second Quarter 1989**

| | *One Family* | *Mobile Homes* | *Duplex* | *3-4 Family* | *5 or More* | *Total* |
|---|---|---|---|---|---|---|
| APACHE COUNTY | 20 | 15 | 0 | 0 | 55 | 90 |
| Percent Change, Previous Year | -9 | -32 | — | — | — | 105 |
| Percent Change, Previous Qtr. | 82 | 88 | — | — | — | 374 |
| COCHISE COUNTY | 70 | 164 | 0 | 0 | 24 | 258 |
| Percent Change, Previous Year | -43 | 925 | — | — | — | 86 |
| Percent Change, Previous Qtr. | 17 | 62 | — | — | — | 60 |
| COCONINO COUNTY | 157 | 83 | 10 | 8 | 82 | 340 |
| Percent Change, Previous Year | -0 | -21 | -38 | -67 | 14 | -13 |
| Percent Change, Previous Qtr. | 96 | 84 | 0 | -62 | -21 | 31 |
| GILA COUNTY | 53 | 60 | 0 | 0 | 0 | 113 |
| Percent Change, Previous Year | -16 | -8 | — | — | — | -12 |
| Percent Change, Previous Qtr. | 13 | 54 | — | — | — | 28 |
| GRAHAM COUNTY | 17 | 50 | 0 | 0 | 0 | 67 |
| Percent Change, Previous Year | -11 | -26 | — | — | — | -23 |
| Percent Change, Previous Qtr. | 21 | -4 | — | — | — | 2 |
| GREENLEE COUNTY | 0 | 0 | 0 | 0 | 0 | 0 |
| Percent Change, Previous Year | — | — | — | — | — | — |
| Percent Change, Previous Qtr. | — | — | — | — | — | — |
| LA PAZ COUNTY | 0 | 0 | 0 | 0 | 0 | 0 |
| Percent Change, Previous Year | — | — | — | — | — | — |
| Percent Change, Previous Qtr. | — | — | — | — | — | — |
| MARICOPA COUNTY | 3,134 | 15 | 2 | 15 | 673 | 3,839 |
| Percent Change, Previous Year | -28 | -88 | -96 | -83 | -77 | -49 |
| Percent Change, Previous Qtr. | 6 | -82 | — | 36 | 23 | 7 |
| MOHAVE COUNTY | 542 | 309 | 12 | 8 | 29 | 900 |
| Percent Change, Previous Year | 50 | 25 | 200 | — | -55 | 33 |
| Percent Change, Previous Qtr. | 25 | 2 | -33 | 0 | -57 | 9 |
| NAVAJO COUNTY | 93 | 33 | 0 | 0 | 6 | 132 |
| Percent Change, Previous Year | 0 | -13 | — | — | — | 1 |
| Percent Change, Previous Qtr. | 138 | 18 | — | — | — | 97 |
| PIMA COUNTY | 786 | 125 | 14 | 6 | 12 | 943 |
| Percent Change, Previous Year | -21 | 495 | 17 | 0 | -97 | -34 |
| Percent Change, Previous Qtr. | 37 | 681 | 40 | — | -69 | 48 |
| PINAL COUNTY | 37 | 60 | 0 | 0 | 12 | 109 |
| Percent Change, Previous Year | -58 | -33 | — | — | — | -39 |
| Percent Change, Previous Qtr. | -27 | -23 | — | — | — | -18 |
| SANTA CRUZ COUNTY | 91 | 1 | 2 | 0 | 6 | 100 |
| Percent Change, Previous Year | 25 | -67 | — | — | -25 | 11 |
| Percent Change, Previous Qtr. | 10 | -99 | 0 | — | — | -49 |
| YAVAPAI COUNTY | 339 | 81 | 8 | 7 | 8 | 443 |
| Percent Change, Previous Year | -9 | -46 | 0 | -77 | -80 | -26 |
| Percent Change, Previous Qtr. | 23 | -36 | 300 | -50 | 0 | 4 |
| YUMA COUNTY | 110 | 83 | 0 | 4 | 36 | 233 |
| Percent Change, Previous Year | 22 | -24 | — | — | 177 | 10 |
| Percent Change, Previous Qtr. | 6 | -27 | — | — | — | 7 |
| TOTAL, ARIZONA | 5,449 | 1,079 | 48 | 48 | 943 | 7,567 |
| Percent Change, Previous Year | -20 | -3 | -44 | -69 | -73 | -33 |
| Percent Change, Previous Qtr. | 15 | -4 | 0 | -11 | 23 | 13 |

Note: A dash indicates that a percent change could not be calculated because at least one period had no activity.

*Source:* Arizona Real Estate Center, College of Business, Arizona State University.

growth is based on tourism and retirees.

Even though the population and the economy of Arizona are still growing, this growth is not sufficient to support significant levels of new activity while filling the existing space. Hence, there appears little on the horizon to provide stimulation to the construction industry. If interest rates would again decline, the single-family sector could improve over the next few quarters. Since the apartment sector has slowed so appreciably, it could rebound slightly, especially in the non-metropolitan areas, but not near the levels of the mid-1980s. Increasing concern about the office building and retail sectors in Maricopa County suggests that these sectors are expected to decline from the current levels. While Pima County has improved, its slow economic activity problems will hamper new development in the area, especially in the commercial and industrial sectors.

In the absence of clearly discernable trends that could force the industry to radically change (up or down) from its current, lethargic pattern, construction activity is expected to remain slow and uneven as developers search for market opportunities throughout Arizona. While the 1989 pace remains below that of the recent past few years, 1989 is expected to continue at near-current levels, and should end as a good year, but not a particularly strong or positive one.

**– Jay Q. Butler**

*Dr. Butler is Associate Professor of Real Estate and Director of the Arizona Real Estate Center in the ASU College of Business.*

**TABLE 4**

**ARIZONA BUILDING PERMITS**
**Second Quarter 1989**

| | Residential* | | Commercial | | Industrial | | Other | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *Number of Permits* | *Dollar Value (000)* | *Number of Permits* | *Dollar Value (000)* | *Number of Permits* | *Dollar Value (000)* | *Number of Permits* | *Dollar Value (000)* | *Number of Permits* | *Dollar Value (000)* |
| APACHE COUNTY | 59 | 1,622 | 2 | 1,854 | 0 | 0 | 11 | 3,645 | 72 | 7,121 |
| Percent Change, Previous Year | -6 | -10 | 100 | 2,372 | — | — | 120 | 7,824 | 4 | 270 |
| Percent Change, Previous Qtr. | 119 | 124 | -33 | 997 | — | — | 120 | 560 | 106 | 393 |
| COCHISE COUNTY | 488 | 7,457 | 34 | 4,498 | 0 | 0 | 194 | 1,944 | 716 | 13,899 |
| Percent Change, Previous Year | 80 | 12 | 17 | 19 | — | — | -1 | 65 | 44 | 20 |
| Percent Change, Previous Qtr. | 67 | 74 | 143 | 307 | — | — | 24 | 443 | 55 | 142 |
| COCONINO COUNTY | 491 | 17,200 | 81 | 14,204 | 4 | 2,208 | 108 | 897 | 684 | 34,509 |
| Percent Change, Previous Year | -4 | -19 | 59 | 110 | 300 | 12,167 | -39 | -22 | -8 | 18 |
| Percent Change, Previous Qtr. | 118 | 78 | 84 | 69 | 300 | — | 30 | -49 | 94 | 74 |
| GILA COUNTY | 234 | 6,201 | 14 | 890 | 0 | 0 | 26 | 556 | 274 | 7,647 |
| Percent Change, Previous Year | -6 | 0 | -13 | 11 | — | — | -59 | -13 | -17 | -2 |
| Percent Change, Previous Qtr. | 31 | 42 | 8 | -82 | — | — | 30 | 562 | 30 | -18 |
| GRAHAM COUNTY | 113 | 1,797 | 12 | 217 | 1 | 250 | 26 | 1,650 | 152 | 3,914 |
| Percent Change, Previous Year | -26 | -17 | 300 | 19 | — | — | 73 | 746 | -11 | 54 |
| Percent Change, Previous Qtr. | 10 | 22 | 50 | -27 | 0 | — | -7 | 1,713 | 9 | 111 |
| GREENLEE COUNTY | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 2 | 6 | 2 |
| Percent Change, Previous Year | — | — | — | — | — | — | — | — | — | — |
| Percent Change, Previous Qtr. | — | — | — | — | — | — | — | — | — | — |
| LA PAZ COUNTY | 5 | 18 | 1 | 7 | 0 | 0 | 1 | 13 | 7 | 39 |
| Percent Change, Previous Year | -94 | -98 | -83 | -92 | — | — | -96 | -86 | -94 | -97 |
| Percent Change, Previous Qtr. | -86 | -97 | 0 | -72 | — | — | -96 | -83 | -89 | -94 |
| MARICOPA COUNTY | 5,145 | 347,382 | 676 | 251,134 | 34 | 18,921 | 4,318 | 186,233 | 10,173 | 803,670 |
| Percent Change, Previous Year | -25 | -21 | -11 | -33 | 6 | 30 | -27 | -12 | -25 | -23 |
| Percent Change, Previous Qtr. | 3 | 1 | 78 | 52 | 6 | -50 | 9 | 18 | 9 | 14 |
| MOHAVE COUNTY | 1,285 | 44,817 | 60 | 15,105 | 4 | 355 | 498 | 2,950 | 1,847 | 63,227 |
| Percent Change, Previous Year | 24 | 51 | 36 | 113 | 100 | 583 | 18 | 4 | 23 | 60 |
| Percent Change, Previous Qtr. | 18 | 24 | 13 | 71 | 300 | -63 | 58 | -72 | 26 | 11 |
| NAVAJO COUNTY | 358 | 8,965 | 18 | 2,388 | 2 | 282 | 71 | 4,396 | 449 | 16,031 |
| Percent Change, Previous Year | 4 | 17 | -5 | -32 | 0 | -60 | 37 | 1,863 | 8 | 32 |
| Percent Change, Previous Qtr. | 103 | 172 | 80 | 661 | -60 | 19 | 173 | 414 | 107 | 241 |
| PIMA COUNTY | 1,687 | 60,164 | 58 | 10,021 | 4 | 3,229 | 1,235 | 25,946 | 2,984 | 99,360 |
| Percent Change, Previous Year | -13 | -20 | -15 | -56 | -60 | -44 | -7 | -22 | -11 | -27 |
| Percent Change, Previous Qtr. | 34 | 30 | -3 | -50 | -20 | 54 | 5 | 37 | 19 | 13 |
| PINAL COUNTY | 245 | 4,872 | 54 | 1,371 | 1 | 2,841 | 199 | 1,666 | 499 | 10,750 |
| Percent Change, Previous Year | -24 | -48 | 32 | -86 | -89 | 239 | -1 | -56 | -13 | -55 |
| Percent Change, Previous Qtr. | -36 | -18 | 2 | 70 | -88 | 1,041 | -24 | 84 | -29 | 36 |
| SANTA CRUZ COUNTY | 101 | 3,039 | 3 | 53 | 0 | 0 | 14 | 88 | 118 | 3,180 |
| Percent Change, Previous Year | 22 | 67 | -67 | -84 | — | — | 133 | 1,157 | 20 | 47 |
| Percent Change, Previous Qtr. | -53 | -15 | 200 | 130 | — | — | 0 | -65 | -49 | -17 |
| YAVAPAI COUNTY | 893 | 30,403 | 40 | 1,764 | 3 | 726 | 181 | 4,784 | 1,117 | 37,677 |
| Percent Change, Previous Year | 2 | -10 | -2 | -79 | -25 | 38 | -36 | -58 | -7 | -31 |
| Percent Change, Previous Qtr. | 34 | 24 | -29 | -57 | -40 | 239 | -9 | -28 | 21 | 7 |
| YUMA COUNTY | 306 | 10,634 | 28 | 3,335 | 0 | 0 | 206 | 1,922 | 540 | 15,891 |
| Percent Change, Previous Year | 7 | 21 | 12 | -42 | — | — | -9 | -41 | 0 | -11 |
| Percent Change, Previous Qtr. | -23 | -2 | 27 | 329 | — | — | -37 | -38 | -28 | 7 |
| TOTAL, ARIZONA | 11,411 | 544,571 | 1,081 | 306,841 | 53 | 28,812 | 7,093 | 236,693 | 19,638 | 1,116,917 |
| Percent Change, Previous Year | -13 | -16 | -3 | -31 | -17 | 27 | -20 | -12 | -15 | -19 |
| Percent Change, Previous Qtr. | 14 | 10 | 51 | 42 | -12 | -31 | 8 | 17 | 13 | 17 |

*Includes mobile homes.
Note: A dash indicates that a percent change could not be calculated because at least one period had no activity.
*Source:* Arizona Real Estate Center, College of Business, Arizona State University.

# Arizona housing affordability varies by county

The affordability of housing in Arizona varies considerably across the state's counties, because each county differs in terms of its residents' incomes as well as home prices and the types of homes built.

Affordability is typically defined as the ability of a household to meet the cash flow payments required to own a median-priced home. This standard is frequently measured by an affordability index, which is a benchmark that can be used to show how affordability changes over time.

Housing affordability is highest in Greenlee County, where the median income is the state's highest and the median home price is the lowest. Affordability is lowest in La Paz County, which has the lowest median income of the Arizona counties, but only the fifth-lowest home prices.

When comparing housing affordability across counties, it must be remembered that the index is only a benchmark based on stated assumptions, the price of homes currently available and the income of the current residents given the jobs available to them. A resident of one county cannot simply move to another county which enjoys higher affordability and expect to benefit, without considering the type of job and income which would be available in the new location, as well as the type and size of housing available and its level of amenities.

An index value of 100 or more indicates that a median-income household can qualify for a median-priced home, assuming a 15 percent down-payment on a fixed-rate conventional mortgage and a FNMA income qualification factor of 28 percent. Affordability can vary substantially if the assumptions are altered, although the rank-

**TABLE 1**

**AFFORDABILITY INDEXES FOR ARIZONA COUNTIES, 1988**
**(Single-family Homes Only)**

| County | Median Sales Price | Mortgage Interest Rate | Loan Amount | Principal, Interest, Taxes, Insurance | Median Gross Monthly Income | Index A | Affordability Indexes With One Assumption Changed From Index A | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B | C | D | E | F | G | H |
| Apache | $60,000 | 10.8% | $51,000 | $560 | $1,640 | 82 | 77 | 73 | 68 | 89 | 74 | 90 | 81 |
| Cochise | 62,000 | 10.8 | 52,700 | 580 | 1,840 | 89 | 84 | 79 | 74 | 96 | 81 | 98 | 86 |
| Coconino | 79,950 | 10.8 | 67,958 | 750 | 2,430 | 91 | 86 | 81 | 76 | 98 | 82 | 100 | 88 |
| Gila | 55,000 | 10.8 | 46,750 | 520 | 2,010 | 109 | 103 | 97 | 91 | 118 | 99 | 120 | 82 |
| Graham | 50,000 | 10.8 | 42,500 | 470 | 1,720 | 103 | 97 | 92 | 86 | 112 | 93 | 113 | 101 |
| Greenlee | 36,750 | 10.8 | 31,238 | 340 | 2,890 | 235 | 222 | 210 | 196 | 255 | 214 | 259 | 246 |
| La Paz | 58,500 | 10.8 | 49,725 | 550 | 1,510 | 77 | 73 | 69 | 64 | 84 | 70 | 85 | 61 |
| Maricopa | 85,000 | 10.8 | 72,250 | 800 | 2,880 | 101 | 95 | 90 | 84 | 110 | 92 | 111 | 108 |
| Mohave | 60,000 | 10.8 | 51,000 | 560 | 1,790 | 89 | 84 | 80 | 74 | 97 | 81 | 98 | 82 |
| Navajo | 55,000 | 10.8 | 46,750 | 520 | 2,400 | 130 | 123 | 117 | 109 | 142 | 119 | 144 | 105 |
| Pima | 75,000 | 10.8 | 63,750 | 700 | 2,250 | 90 | 85 | 80 | 75 | 98 | 82 | 99 | 90 |
| Pinal | 48,000 | 10.8 | 40,800 | 450 | 1,980 | 123 | 116 | 110 | 103 | 134 | 112 | 135 | 105 |
| Santa Cruz | 67,500 | 10.8 | 57,375 | 630 | 2,190 | 97 | 92 | 87 | 81 | 105 | 88 | 107 | 102 |
| Yavapai | 65,000 | 10.8 | 55,250 | 610 | 1,880 | 86 | 81 | 77 | 72 | 94 | 78 | 95 | 77 |
| Yuma | 61,000 | 10.8 | 51,850 | 570 | 1,850 | 91 | 86 | 81 | 75 | 98 | 82 | 100 | 85 |
| Arizona | 79,000 | 10.8 | 67,150 | 740 | 2,530 | 95 | 90 | 85 | 80 | 104 | 87 | 105 | 95 |
| U.S. | 92,800 | 10.7 | 78,880 | 870 | 2,670 | 86 | 82 | 77 | 72 | 94 | 79 | 95 | NA |

Index A shows the affordability index for the assumptions in the table above (such as price, interest rate and income). Other assumptions include a 15 percent downpayment on a 30-year loan with a 15 percent estimate for taxes and insurance and a FNMA qualification factor of 28 percent. Indexes B through H show the index after one of these assumptions have been changed; all other assumptions are the same as in column A. The altered assumption for each column is listed in the footnotes below.

Assumptions altered for indexes B through H:

- B – 10 percent down payment
- C – 25 percent FNMA qualification factor
- D – 15-year loan term
- E – Mortgage rate lowered by 1 percent
- F – Sales price increased by 10 percent
- G – Income increased by 10 percent
- H – The median home size is held constant in each county to adjust for size differences – the median square footage for Arizona (1,440 s.f.) was multiplied by the median price-per-square-foot in each county to determine the sales price. This index shows what the affordability level would be in the county for a home the size of the median home in Arizona.

*Source:* Arizona Real Estate Center, College of Business, Arizona State University. Interest rates are from *Federal Home Loan Bank Board News*; income is from *Sales and Marketing Management*; national home prices are from U.S. Bureau of the Census and National Association of Realtors.

ing of the counties would change only if incomes or home prices changed more in one county than in others.

## COUNTY COMPARISONS

As shown in Table 1, affordability varies considerably across the state, and housing in most Arizona counties has been more affordable than nationally. The Arizona 1988 index value of 95 means a household that earned the median gross monthly income of $2,530 had 95 percent of the income required to qualify for the purchase of the median-priced home ($79,000).

Affordability varies among the various Arizona counties due to varying incomes and home prices. Counties influenced by mining, such as Greenlee, Navajo, Pinal, and Gila, had the highest levels of affordability. Greenlee County had the highest income ($2,890 monthly), while Apache County reported the lowest monthly income ($1,640). Homes were highest-priced in Maricopa County ($85,000), and were lowest-priced in Greenlee County ($36,750).

Care must be taken in the interpretation of this index for each county. For example, Mohave and Yavapai Counties have low affordability indexes, due to low incomes ($1,800 per month). However, both counties have a high percentage of retired people, who have low incomes but frequently have more wealth than younger households. On the other hand, Greenlee County has a very high index value due to the influences of a historically inexpensive housing market coupled with higher paying mining jobs. In some other counties such as Coconino and Gila, seasonal housing could influence the index value. Another consideration is that some counties have a limited resale market, a condition which can produce wide swings in annual sales activity, median sales values, and the resulting index values.

An alternative way to compare affordability levels between areas is to hold the size of the home constant in each county, determining affordability from the median price-per-square-foot for homes in that individual county. This method takes into account the size of the homes sold and their amenity levels. The sales price for each county is determined by multiplying the median square footage for all homes in Arizona (1,440 square feet) by the median price-per-square-foot for homes sold in that individual county. The results of this method are shown in Table 1, Column H.

Except for Greenlee County, which emerged on the high side, and La Paz County, which was low, the counties congealed into two groups with similar levels of affordability. Maricopa, Navajo, Pinal, Santa Cruz, and Graham Counties all had affordability levels between 101 and 108. Index levels of all other counties (except Greenlee and La Paz) ranged between 77 and 90. The variation in the counties was not as large as when the standard index was used, illustrating the differences in size and the level of amenities included in the home prices.

**TABLE 2**

**AFFORDABLE HOME PRICE AND MONTHLY PAYMENT**
**By Level of Income**
**(Effective Interest Rate of 10.8 Percent)**

| Gross Monthly/Annual Income | Sales Price | Monthly Housing Payment | Affordability Index |
|---|---|---|---|
| $1,675/$20,000 | $50,050 | $470 | 100 |
| $2,075/$25,000 | 62,250 | 580 | 100 |
| $2,500/$30,000 | 74,675 | 700 | 100 |
| $2,925/$35,000 | 87,125 | 820 | 100 |
| $3,325/$40,000 | 99,575 | 930 | 100 |
| $3,750/$45,000 | 112,025 | 1,050 | 100 |
| $4,175/$50,000 | 124,475 | 1,170 | 100 |
| $6,250/$75,000 | 186,725 | 1,750 | 100 |
| $8,325/$100,000 | 248,950 | 2,325 | 100 |

*Source:* Arizona Real Estate Center, College of Business, Arizona State University.

## AFFORDABILITY UNDER CHANGING ASSUMPTIONS

Even though the index is only a benchmark given certain assumptions, the assumptions can be varied to meet different market conditions. Columns B through H in Table 1 show the results when one assumption is altered, leaving all others as in the original index A.

A higher down payment, lower mortgage rates, lower sales prices, or higher incomes would all improve the affordability levels of all counties, but would not change the relative ranking of any county. However, a higher down payment essentially improves affordability by lowering the loan amount, and buyers must have more savings to pay the larger down payment.

A lower down payment, more stringent FNMA qualification factors, a shorter loan term, higher mortgage rates, higher sales prices, or lower incomes would lower affordability levels, resulting in fewer buyers able to afford the median priced home.

## AFFORDABILITY BY INCOME LEVEL

The affordability levels so far have assumed that a household earns the median income. Of course, most people do not earn this amount — half earn more and half earn less. A better idea of affordability for a specific household can be obtained by varying the income, while holding all other factors constant (see Table 2).

For example, a household earning $25,000 annually could still afford a home, but the price would be closer to $62,250. A household earning around $32,000 annually could afford the median-priced Arizona home of $79,000, while an income closer to $37,000 would be needed to afford the median-priced U.S. home of $92,800.

## OUTLOOK

Mortgage interest rates will continue to remain the key to housing affordability. Rates will probably not change significantly in the near future, so little change is likely in affordability. Home prices are expected to remain soft during the balance of 1989, due to the competitive real estate market. When the real estate market recovers from its current slump, both prices and incomes should rise more quickly than during 1989, but mortgage rates will still be the primary determinant in the level of housing affordability.

– **Sharla Kivett,** *Research Analyst*
*Arizona Real Estate Center*

# Agriculture census documents industry's difficulties

The average value of agricultural land and buildings, as well as the market value of agricultural products, all declined in Arizona on an inflation-adjusted basis between 1982 and 1987, according to the 1987 Census of Agriculture, one of the economic censuses conducted every five years by the U.S. Bureau of the Census. These large real declines in value are an indication of the problems encountered by Arizona's agricultural industry through much of the 1980s.

## CHARACTERISTICS OF AGRICULTURAL OPERATIONS

Nearly 7,700 farms and ranches (hereafter referred to as farms) were operating in Arizona in 1987, according to the broad definition used in the census: all operations that typically produce at least $1,000 worth of agricultural products in a year. A large number of small operations for which farming is not the main occupation are thereby included; this amounted to nearly one-half of the 7,669 operations in 1987. Further, nearly one-half of the farms operated on fewer than 50 acres.

The number of farms increased 5 percent between the 1982 and 1987 censuses, but this resulted almost entirely from a 10 percent gain in farms of less than 10 acres. Not even one-half of the operations had harvested cropland in 1987; only slightly more had irrigation. Most of the rest were strictly ranching operations.

One-half (36.3 million acres) of the land in Arizona is considered agricultural; this includes public lands on which ranches possess grazing rights. However, 82 percent of this land is considered rangeland and only 4 percent is called cropland. Even less than 4 percent was irrigated or harvested in 1987. Because of a relatively few ranches with massive grazing rights, the average size of an agricultural operation was more than 4,700 acres, even though only 844 operations were of 2,000 acres or more.

Most operations (70 percent) were individually or family-run, though this number declined slightly between 1982 and 1987. All other types of ownership increased, but less than 10 percent of all operations were owned by corporations. More than one-half of the operators worked off the farm part of the year; about 40 percent worked more than 200 days — essentially full time — elsewhere. The average age of an operator was 51.5, up one year since 1982.

Nearly half of all operations owned cattle and calves, but the number of such farms declined between 1982 and 1987, as did the number of cattle (1.11 million in 1987). Comparatively few had other types of livestock. The most common crops were cotton, hay, and fruits and nuts from orchards, though the acreage devoted to wheat and vegetables was greater than that of orchards. For most crops, the number of farms growing the crop and the acreage grown fell between 1982 and 1987.

## VALUES

The average value of land and buildings per farm was $1.32 million, down 12 percent between 1982 and 1987. The per acre value was $279, down 4 percent. Those declines were even greater on a real basis, with inflation totaling 19 percent during these five years.

Though the average value exceeded $1.3 million, only 18 percent of the farms were valued at $1 million or more. One-third had land and buildings valued at less than $100,000. In contrast, the value exceeded $5 million on 4 percent of the farms. The average value of machinery per farm was $55,700.

The market value of agricultural products sold in 1987 exceeded $1.63 billion, an increase of 7 percent from 1982 before inflation. The average market value per farm was $212,400, nominally up 2 percent. More than one-half of the farms had a value of products sold of less than $10,000; nearly three-fourths sold products worth less than $50,000. In contrast, 4 percent had sales of more than $1 million.

Crop values were up 11 percent to $897 million in 1987, led by a 19 percent increase since 1982 in vegetables and melons (to $241 million). At $362 million, cotton and seed remained the largest crop, but the value barely increased from 1982. The value of livestock sold in 1987 was $732 million.

## OTHER FINANCES

Production expenses totaled $1.30 billion in 1987. Only the farm labor expense rose from 1982 levels; this increase exceeded the overall inflation rate. Expenses were flat or lower in every other category. On average, the biggest expenses were for livestock, feed for livestock, and hired farm labor. The average production expense per farm was $170,000, but it was less than $10,000 on one-half of the farms and more than $500,000 on 6 percent.

Government payments of $58 million were made in 1987 to nearly 1,200 farms, an average of $48,600 per farm. However, the bulk went to 379 farms that received at least $50,000 each. Commodity Credit Corporation loans were held by 242 farms, totaling $13.5 million. Each figure was lower than in 1982.

The net cash return from agricultural sales averaged $40,000 in 1987. However, more farms lost money than gained. For those farms with less than $10,000 of sales, the net cash return averaged a negative $3,700. Only 14 percent of all farms (1,040) gained a net of $50,000 or more.

## BY COUNTY

The number of farms was distributed more evenly across the state than was the population, though Maricopa County still led with more than 2,300 agricultural operations, 30 percent of the state total. The average size ranged widely by county, inversely corresponding to the percentage of operations that grow crops. The smallest average size was in Yuma and Maricopa counties. The per acre value of land and buildings also reflected the percentage of crop-growing operations, with the value in Yuma County twice as high as in La Paz and Maricopa counties, which had values much higher than in all other counties.

The average market value per farm was highest in La Paz, Yuma and Pinal counties. Maricopa County's value was not as great because of the large number of small part-time farms located in the Phoenix area. Expenses per farm closely followed market value.

## SUMMARY

Most of the of agricultural products in Arizona are produced by relatively few farming and ranching operations. The large number of small, part-time operations included in the statistics tend to skew the census results.

Comparing the results of the 1982 and 1987 censuses reveals the difficulties the industry underwent in Arizona through most of the 1980s. The value of land and buildings dropped even before considering inflation. The market value of products sold declined on an inflation-adjusted basis, but so did production expenses.

– Tom R. Rex
*Research Manager*

# Coincident index: Economy lost ground in June

Declines were measured in each of the coincident economic indexes in June. In Maricopa County, the 0.4 percent decrease, which put the index at 149.8 (1982=100), followed a strong gain in May. Elsewhere in the state, however, the declines were larger and followed modest gains in May. The Pima County index fell 1.1 percent to 135.6; the index for non-urban Arizona dropped 0.9 percent to 131.9.

Employment declined and the unemployment rate rose in all areas of the state in June. Conditions were mixed for the two other index components; both retail sales and commercial building permit valuations rose in the Phoenix area, but fell in the Tucson area. In rural Arizona, retail sales gained, but the building permits component decreased.

Though well below its long-term average, economic growth in Maricopa County led the state both in the second quarter and during the first half of the year. This mostly resulted from improvements in employment and unemployment, though employment gains have been small since late 1987 (see Figure I). The components of the non-urban Arizona index performed comparably to those of the Phoenix area index during the first six months of 1989, except that employment posted no net change during that period.

The coincident index declined in Pima County during both of the first two quarters of 1989, with poorer performance in each of the components compared to the Phoenix area. Each component had a net negative impact on the Tucson area index. The Tucson economy's weakness since the beginning of 1988 has been such that neither employment nor the coincident index was as high in June as at the end of 1987.

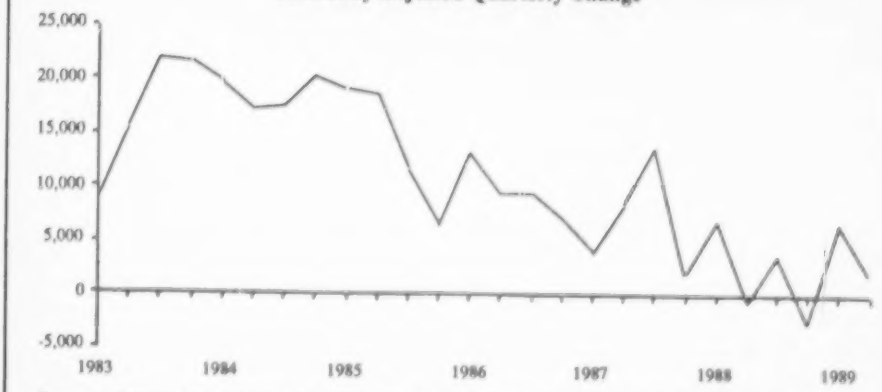
Following a 0.9 percent increase in May, the composite index for the state as a whole declined 0.6 percent in June, to 144.1.

A preliminary look at July data indicates little change in the indexes, except perhaps in the rural counties, where employment appears to have recovered June's loss.

**– Tom R. Rex**
*Research Manager*

**FIGURE I**

**Wage and Salary Employment, Maricopa County**
**Seasonally Adjusted Quarterly Change**




*Source:* Center for Business Research, College of Business, Arizona State University.

# August purchasing indicators show continued weakness

The Arizona economy grew progressively weaker in August, as new order receipts — the driving force behind economic growth — tailed off. Both production and employment registered a lackluster performance as a result of the new order decline. The good news is that the inflation rate continues to come down, and inventories are well under control.

Prices paid for purchased items went up again in August, but at the smallest rate since January 1987. Delivery time on shipments from vendors continued to stretch out at a rate somewhat greater than in June or July. While lead times lengthened in each of the months this year, the increase rates have been under those of 1988, showing that the economy is growing at a slower rate.

Improvements in Arizona's economic performance will be hard to come by, and the economy likely will continue to be sluggish in the second half. However, the lower inflation rate and the control being exercised over inventories indicate that we probably will avoid anything more serious than a shallow and short economic pause.

**TABLE 1**

**AUGUST PURCHASING SURVEY**

| | Percent of Purchasing Managers Indicating Each Response (August compared to July) | | |
|---|---|---|---|
| *Key Indicators* | *Higher* | *Same* | *Lower* |
| Prices paid for major commodities | 27 | 66 | 7 |
| Delivery time from vendors | 27 | 66 | 7 |
| Purchased materials inventory level | 22 | 48 | 30 |
| New orders received | 26 | 39 | 35 |
| Production | 26 | 47 | 27 |
| Employment | 20 | 61 | 19 |
| Purchases | 28 | 35 | 37 |

*Source:* Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona and the Northern Arizona Group.

**– Harold Fearon**
*Dr. Fearon is Director of the Center for Advanced Purchasing Studies at Arizona State University.*

## ARIZONA ECONOMIC INDICATORS

| | Month or Quarter | Value | Percent Change from Previous Period | Percent Change from Year Ago | Year-to-Date Value | Year-to-Date Percent Change from Year Ago |
|---|---|---|---|---|---|---|
| GROSS STATE PRODUCT (In Billions of Dollars, at Annual Rate) | | | | | | |
| Arizona - Current Dollars | 4th Qtr. | 61.103 | 1.7 | 5.0 | NA | NA |
| Arizona - 1982 Dollars | 4th Qtr. | 48.005 | 0.0 | 0.9 | NA | NA |
| COINCIDENT ECONOMIC INDEXES (1982 = 100) | | | | | | |
| Arizona | June | 144.1 | -0.6 | 3.1 | NA | NA |
| Metropolitan Phoenix | June | 149.8 | -0.4 | 3.0 | NA | NA |
| Metropolitan Tucson | June | 135.6 | -1.1 | 2.6 | NA | NA |
| Non-urban Arizona | June | 131.9 | -0.9 | 4.3 | NA | NA |
| CONSUMER PRICE INDEX (1982-84 = 100) | | | | | | |
| Metropolitan Phoenix | 2nd Qtr. | 125.9 | 1.8 | 5.0 | NA | NA |
| INDEX OF LEADING ECONOMIC INDICATORS (1982 = 100) | | | | | | |
| Arizona | July | 117.6 | 0.3 | -2.4 | NA | NA |
| BUILDING PERMITS (Total Dollar Value in Thousands) | | | | | | |
| Maricopa County | June | 348,677 | 37 | 10 | 1,508,644 | -14 |
| Pima County | June | 38,233 | 8 | -27 | 186,908 | -31 |
| Balance of State | June | 77,928 | 21 | 2 | 378,705 | 4 |
| Arizona | June | 464,838 | 31 | 4 | 2,074,257 | -13 |
| TOTAL HOUSING UNITS AUTHORIZED | | | | | | |
| Maricopa County | June | 1,320 | -6 | -50 | 7,431 | -39 |
| Pima County | June | 377 | 8 | -40 | 1,582 | -52 |
| Balance of State | June | 1,039 | 38 | 0 | 5,303 | 1 |
| Arizona | June | 2,736 | 8 | -37 | 14,316 | -31 |
| HOME SALES | | | | | | |
| Maricopa County - Number | July | 4,590 | 23 | -3 | 27,130 | -7 |
| Maricopa County - Median Price | July | 82,200 | -0.9 | 0.2 | 80,100 | 0.1 |
| HOUSING AFFORDABILITY INDEXES | | | | | | |
| Metropolitan Phoenix - New Homes | 2nd Qtr. | 90 | 2.3 | -3.2 | NA | NA |
| Metropolitan Phoenix - Resale Homes | 2nd Qtr. | 119 | -3.4 | -0.8 | NA | NA |
| MORTGAGE INTEREST RATES (Conventional, 30-year, Fixed-rate) | | | | | | |
| Maricopa County | August | 9.9 | 0.0 | -6.6 | NA | NA |
| POPULATION ESTIMATES (In Thousands) | | | | | | |
| Maricopa County | 2nd Qtr. | 2,059 | 0.5 | 2.2 | NA | NA |
| Arizona | 2nd Qtr. | 3,570 | 0.6 | 2.2 | NA | NA |
| ELECTRICAL POWER SALES (In Millions of Kilowatt Hours) | | | | | | |
| Arizona | June | 4,258 | 12.8 | 1.4 | 21,316 | 6.1 |

NA = Not Applicable

*Source:* Center for Business Research, Arizona Real Estate Center, and Economic Outlook Center, College of Business, Arizona State University.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